

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.600
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
RE1		5.00	10.000	100	87.357	-225.770	0.450
S1	0.003	5.00	10.000	450	74.969	-225.770	0.574
S2	0.001	5.00	10.000	450	74.969	-221.568	0.616
S3			9.950	450	65.862	-218.065	0.700

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.001	RE1	S1	12.388	0.600	9.550	9.426	0.124	100.0	100	5.27	50.0
1.002	S1	S2	4.202	0.600	9.426	9.384	0.042	100.0	100	5.36	50.0
2001	S2	S3	9.757	0.600	9.384	9.250	0.134	72.8	100	5.54	50.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.001	12.388	100.0	100	Circular	10.000	9.550	0.350	10.000	9.426	0.474
1.002	4.202	100.0	100	Circular	10.000	9.426	0.474	10.000	9.384	0.516
2001	9.757	72.8	100	Circular	10.000	9.384	0.516	9.950	9.250	0.600

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.001	RE1	100	Manhole	Adoptable	S1	450	Manhole	Adoptable
1.002	S1	450	Manhole	Adoptable	S2	450	Manhole	Adoptable
2001	S2	450	Manhole	Adoptable	S3	450	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
RE1	87.357	-225.770	10.000	0.450	100		0	1.001	9.550	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S1	74.969	-225.770	10.000	0.574	450	 1	1.001	9.426	100
						0	1.002	9.426	100
S2	74.969	-221.568	10.000	0.616	450	 1	1.002	9.384	100
						0	2001	9.384	100
S3	65.862	-218.065	9.950	0.700	450	 1	2001	9.250	100

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
30	0	0	0
100	40	0	0

Node S3 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	9.050	Depth (m)	0.400
Side Inf Coefficient (m/hr)	0.01400	Time to half empty (mins)	7329	Inf Depth (m)	
Safety Factor	3.0	Pit Width (m)	3.000	Number Required	1
Porosity	0.95	Pit Length (m)	2.000		

Results for 30 year Critical Storm Duration. Lowest mass balance: 95.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE1	1	9.550	0.000	0.0	0.0000	0.0000	OK
15 minute winter	S1	11	9.455	0.029	1.0	0.0076	0.0000	OK
15 minute winter	S2	11	9.414	0.030	1.3	0.0057	0.0000	OK
120 minute winter	S3	130	9.261	0.011	0.4	1.2070	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	RE1	1.001	S1	0.0	0.000	0.000	0.0112
15 minute winter	S1	1.002	S2	1.0	0.525	0.166	0.0080
15 minute winter	S2	2001	S3	1.3	0.678	0.183	0.0187
120 minute winter	S3	Infiltration		0.0			

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 95.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	RE1	1	9.550	0.000	0.0	0.0000	0.0000	OK
360 minute winter	S1	296	9.482	0.056	0.3	0.0149	0.0000	OK
360 minute winter	S2	296	9.482	0.098	0.4	0.0188	0.0000	OK
360 minute winter	S3	296	9.482	0.232	0.4	2.3198	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	RE1	1.001	S1	0.0	0.000	0.000	0.0179
360 minute winter	S1	1.002	S2	0.3	0.379	0.050	0.0259
360 minute winter	S2	2001	S3	0.4	0.479	0.056	0.0762
360 minute winter	S3	Infiltration		0.0			